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Memorandum

4500

TO : Boyd Wickman, Project Leader

DATE: June 13, 1967

FROM : R. R. Mason, Research Entomologist

SUBJECT: Tussock moth population at Sierra Ancha

During the week of June 5-8 I attempted to estimate the size of the tussock moth population near Aztec Peak in the Sierra Ancha mountain in Arizona. This was done systematically by cluster sampling at 10 different points located approximately 20 chains apart in the potential infestation. Three foliage samples were clipped with a pole pruner and basket from the mid-crown of fifteen trees at each point. All tussock moth larvae were tallied on each sample and transformed to a common unit of branch area of 1000 sq. in. Following are the results of these examinations:

Point	Mean larvae per 1000 in^2	Standard error	Percentage of samples with tussock moth
A	1.82	0.58	22
B	1.80	0.69	22
C	7.29	0.85	73
D	3.29	0.62	49
E	0.78	0.35	13
F	2.18	0.47	36
G	2.04	0.51	40
H	0.67	0.30	11
I	0.07	0.07	2
J	0.89	0.39	13
All points	2.08	0.65	28

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Most larvae sampled were in the late first or early second instar. Defoliation at that stage by this population level was not discernible, but it may become conspicuous in the heavier populated areas as the larvae mature. Although this is an apparently low population and is relatively inconspicuous this year it would seem to be a nucleus for an outbreak next year given a substantial factor of increase. A level of 50 early instar larvae per 1000 sq. in. constitutes a significant outbreak. This level could be reached next year with a 25 fold increase which is apparently not uncommon for the tussock moth judging from past counts of new to old egg mass ratios.

As a way of estimating larval survival it would be very desirable to resample the same cluster points later in the cycle (latter part of July). If survival is high this should probably be followed up in the fall by an intensive egg sample to firmly establish the trend of the infestation.

Richard R. Mason